Filing Receipt

Filing Date - 2023-07-18 12:35:29 AM

Control Number - 53911

Item Number - 52

Date: July 18, 2023

To: Commissioner Glotfelty; Commissioner McAdams

Cc: ADER Task Force Chair, Jason Ryan, CenterPoint Energy
ADER Task Force Charter Members

From: Arushi Sharma Frank, Texas PUC ADER Task Force Vice Chair, on behalf of Tesla, Inc.

Re: Supplemental Memo of Tesla, Inc. in Response to ADER Task Force Quarterly Report Submission of Progress Milestones of the ADER Pilot Year 1, in Project No. 53911

Dear Commissioners Glotfelty and McAdams, and ADER Task Force Colleagues:

I am pleased to provide on behalf of Tesla, Inc. the following progress report stating the detailed milestones achieved in the first year of the ERCOT Aggregated Distributed Energy Resource ("ADER") Pilot Project. The ADER ERCOT Pilot Project and ADER Pilot Task Force were constituted following July 2022 Open Meeting and workshop discussions, as described in a memorandum dated July 13, 2022 in Project No. 51603. The July 13, 2022 memorandum stipulated several guiding principles for the work of developing the ERCOT Pilot Project and directed ERCOT to prepare and present a Governing Document for the ADER Pilot Project. The memo also specified five areas of project scope metrics regarding scale, duration, utility participation, customer experience, and reliability. The following updates speak to the significant and numerous success milestones that have been spearheaded through the work of the ADER Task Force in conjunction with ERCOT and Commission staff to implement the first phase of the ADER Pilot Project.

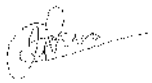
The ADER Pilot Project has reached numerous success milestones, embedded in the details of market participants' efforts to develop a business model, innovate technical requirements, identify customers, register as an ADER Resource Entity and thereafter ready the ADERs to participate as energy and reserves in ERCOT's day-ahead and real-time markets.

In submitting this progress report as an ADER registrant and participant, Tesla therefore seeks to provide a clear view of the tremendous progress that has been made in under a year, from the date that ERCOT published its ADER roadmap guidelines on 12/19/22 to today, when an initial batch of ERCOT and utility-qualified Tesla Electric retail energy customers will participate in a VPP test prior to ERCOT commissioning activities over the next two weeks.

Additionally, I am pleased to report below on the national recognition that the combined work of the ADER Task Force, ERCOT, Texas stakeholder organizations invested in energy reliability, and the Public Utility Commission of Texas have received through sponsoring and committing their time and energy to this pioneering effort— recognition that is certainly due to the dedication, speed and clear-eyed vision that this project delivers towards unlocking the value of distributed energy resource as virtual power plants (VPPs) on equal footing with conventional resources.

Please contact me for further information on this submission. I extend my personal thanks to the Commission for constituting the work mandate of the ADER Task Force and inviting myself, our Task Force Chair Jason Ryan, and my task force colleagues to set the gold standard for stakeholder-driven collaboration and innovation on DER/VPP market design and energy reliability policy.

Sincerely,



Arushi Sharma Frank, Tesla Inc.
ADER Task Force Vice Chair

Enclosures:

ADER Pilot Year 1 Milestones Report of Tesla, Inc.

Department of Energy Virtual Power Plant Roundtable

ADER Pilot Year 1 Milestones Report, Tesla, Inc.

Tesla Electric Business Contacts:

Kevin Joyce, Global Lead, Aggregation and Grid Services
Gregory Thurnher, Senior Technical Manager, Global Aggregation and Grid Services

Overview

While processes for demand-side participation have been longstanding in the ERCOT region, aggregated participation from distributed devices has never included a population of devices that, on an individual basis, can be net-injectors of electricity in times of scarcity or grid need, with committed performance equivalent to that expected of traditional generation resources dispatched by ERCOT. This is the distinction between current demand response and price response programs administered in the ERCOT region and the new market participation mechanisms being piloted in the ERCOT ADER Pilot Project. More simply, the ADER pilot pioneers in the ERCOT region the ability for controllable DERs at an aggregated location to participate in 5-minute dispatch.

Developing new processes to mirror the commercial and physical activity of a traditional resource is no small feat. Activities such as registration, telemetry, and asset / market operations for ADERs did not exist before the efforts that commenced in the ERCOT region as a result of the ADER Pilot. Further, Tesla has developed an ADER control system that anticipates availability and influences response every five minutes. The aggregated response is anticipated and intuitive from the customer perspective; no such control system existed prior to the ADER pilot. The controls developed by Tesla engineers considers the availability, constraints, and conflicts with individual sites and their respective onboard controls to evoke a response that is equal or better to that expected of a traditional generation or storage resource.

The timing of the ADER Task Force's work to sponsor this pilot could not be more critical to the reliability future of the ERCOT region and to Texas consumers. Merely establishing the infrastructure and processes to enable distributed devices to participate in a coordinated grid operator dispatch is a process that can take years to establish and finesse into permanent market design rules that are akin to requirements for conventional generation and storage today. In markets around the world and around the U.S., efforts to move these infrastructure and process steps forward can take several years and are expected to do so; however, Texas is ahead of the curve in laying the foundation for a future in which grid-coordinated dispatch of distributed devices will be in harmony with traditional wholesale assets. The following are ADER grid-integration milestones which have progressed as a result of the work of the ADER Task Force in conjunction with Texas utilities, ERCOT, and Commission staff.

Milestones

New Processes Established for Coordination with TDSPs, Enrollment Screening, Interconnection Review

> The July 13, 2022 memo from Commission sponsors called for distribution utilities to stay actively engaged in the pilot to ensure safety and quality of customer experience and develop a process in ultimate consideration of reliability, to qualify DER customers for ADER participation. Distribution utilities have indeed served the role of being key partners in commissioning and operating ADERs (VPPs). The ADER Pilot has created a stable and consistent forum for ADER participants to engage both formally and informally with the TDSP community to develop a registration and qualification process as a gateway to enabling VPP/TDSP customer-participants.

Today, within nine months of the pilot metrics being established by ERCOT in its Governing Document, we have a functional process to:

(1) identify potential participants (individual customers by device and premise meter ID)
(2) validate the completeness of each individual interconnection
(3) maintain a precise physical and electrical location for each customer premise, and
(4) verify that each premise is not participating in competing or overlapping demand response programs.
(5) Database participant characteristics to ensure safe, reliable dispatch and sets the stage for future phases (potentially with a more granular locational dispatch.)

While the initial process is workable, the population is relatively small. When ADERs become commonplace, subsequent phases of the Pilot should include more elegant data transfer tools. Without the work being accomplished today with the TDSP community, the basic requirements for more sophisticated data collection and databasing tools could not be completed. This work also provides a level of DER device-level visibility to TDSPs that was not available to TDSPs from ERCOT, from interconnection applications, or other third party or customer reporting sources – the granularity of information exchange between ADER participant-applicants, TDSPs, and ERCOT is indicative of the clear objectives of the project charter to ensure that TDSPs have clear visibility into the potential impacts of ADERS on their distribution systems and a role in ensuring an increase in reliability as a result of customer participation in VPPs.

Communicating with individual devices

As aggregators of ADERS, we are engaged in iterating sophisticated communication protocols to verify ADER status in real time and anticipate future capabilities to fulfill reserve obligations. The ADER pilot has provided a problem statement which Tesla Engineering has responded to by leveraging existing communication standards and pathways to consistently report back and, when needed, record events.

Tesla is confident that its work will be the pioneering effort needed to build ERCOT's confidence in the baseline requirements for communications protocols for ADERs as they become more commonplace. Communicating with distributed devices is a universally acknowledged challenge but not an unsolvable one.[1] Tesla looks forward to reporting on this topic as the pilot project progresses.

Contribution to ERCOT's Study and Development of a Reliability Standard

ERCOT has been directed by the Texas legislature in Senate Bill 3 to develop a Reliability Standard. Tesla and other commenters have provided feedback[2] on the development of the study, noting that it

[1] Consider an aggregation of thermostats. Each premise in a thermostat aggregation is undoubtedly consuming electricity to cool their residence. However, each individual residence has different vintage HVAC systems, with differing quality and quantity of insulation, windows, direct exposure to the sun, etc. What is more, each participant must also express their preferred temperature setting. These variables create a unique electric consumption pattern. Distributed batteries, particularly when paired with solar, have similar, but unique site objectives. Maximizing the utilization of solar by selective storage patterns helps our customer base minimize their impact to the grid.

[2] *See* Tesla comments in Project 54584, Reliability Standard for the ERCOT Market (supporting the use of a Strategic Energy & Risk Valuation Model (SERVM) for ERCOT's proposed study framework towards creating an ERCOT Reliability Standard as required under Senate Bill 3; discussing that metrics in the model must capture the availability of aggregated distributed energy resources and other demand-side flexibility tools readily available to ERCOT and dispatchable at a market price, and stating that "this will be a critical exercise that contributes to a realistic assessment of

should be defined by probabilistic metrics that cover the dynamic features of loss-of-load events across both average reliability and tail event/extreme condition avoidance. Tesla's comments noted that these metrics should include, as ERCOT proposes, a limit on both the magnitude and duration of any single loss of load event, and a limit on the frequency of loss of load events. Further, Tesla discussed that the study must recognize and build scenario analyses around the independent, measurable reliability contribution that ADERs and other DERs can and will continue to provide to the ERCOT grid. Price-responsive, dispatchable DERs such as Tesla Powerwall residential energy storage systems can provide an equivalent or better reliability contribution as a conventional single-site generator on the transmission system in a variety of scenarios under scope of the proposed study.[3] The expansion of the ADER pilot project will demonstrate this proposition in practice and become a valuable data source that will contribute to the reliability study ERCOT is undertaking.

Customer engagement, transparency, and interest in supporting ERCOT Reliability

The July 13, 2022 memorandum in Project No. 51603 describes the need to provide customers relevant operational data and a good customer experience that prioritizes affordability and reliability. Tesla is pleased to report on this milestone; customer engagement, thus far, has been demonstrably successful. Many Tesla Electric customers have developed a comfortable vocabulary around ERCOT prices, energy sellback rates, and grid conditions including an understanding of the significance of the ERCOT high offer cap and role they have as dispatchable capacity that can earn a return for supporting the grid during these periods.

Customers who make an investment in solar, storage, or both and opt into a demand response program deserve transparency. Transparency in VPP operations at a site level, increases customer understanding. Tesla has enjoyed a long-standing series of accomplishments of customer engagement through the Tesla app. The ADER pilot has extended the boundaries of customer engagement in Texas. To date, Tesla customers enjoy notification of their Tesla Powerwall deployment driven by ERCOT Load Zone Price.

As part of our ADER commissioning plan, Tesla has conditioned our customers to a dynamic, rather than static, price response threshold. In addition to dynamic price settings, Tesla has developed a suite of web-based and mobile notification systems to enhance awareness of the application of customers' Powerwall devices as they begin to fulfill grid needs in real-time.

Customers are connected to ERCOT markets, by way of their devices, and our mobile app. The ADER pilot has allowed Tesla to increase that connection, specifically by raising awareness of grid reserves, their deployment characteristics, and perhaps most importantly to the customer, the value

---

additional supply-side and demand-side generation/load response needed to avoid exceeding the study criteria for modeled scenarios").

[3] This proposition can be illustrated by a simple example: 300 <1 MW DERs have an objectively better, measurable reliability value than one 300-MW transmission connected generator in a scenario that implicates loss of carrying capability on an ERCOT transmission element- the 300 MW generator can trip offline due to any one failure in this scenario. By contrast, 300 DERs operating on a diversity of independent interconnections to the low voltage grid are in this scenario are: (i) aggregated up to a diversity of physical transmission elements, (ii) by design located on dozens of distributed circuits which aggregate to diverse electrical buses, (iii) distributed across an area as large as the entire ERCOT interconnection, and (iv) subject to physical and software controls (imposed by the DER owner & operator, and distribution utility including mandatory disconnects between the grid and the DER), which effectively island potential cascading or chain failures to single <1 MW sites or to physically proximate co-located DERs, preventing failure across the 300-MW distributed footprint.

they create when participating in a coordinated dispatch. Even in the early phases of implementing the VPP experience, Tesla customers are asking for more engagement (most notably, many customers request ability to set their own deployment price.)

An amazing, yet unexpected outcome of the ADER pilot is the customer willingness to set their own deployment price. A customer-determined deployment price is akin to establishing price elasticity of demand: a longstanding, missing key component of energy markets.

Tesla has submitted additional information on this unique and compelling outcome of the ADER pilot in Project No. 53911, available here:
https://interchange.puc.texas.gov/Documents/53911_50_1307987.PDF.

Developing measurement and verification with the ERCOT ISO

The ADER pilot created an opportunity to tackle one of the more onerous challenges in the demand response world. Specifically, measuring device response exclusive of any other behind-the-meter activity (load change) as defined by the ERCOT ADER Pilot Governing Document has been a productive journey.

ERCOT has established guidance and Tesla has delivered the ability to monitor effective load curtailment at a device level. This monitoring, coupled with finely tuned control systems, has enabled an aggregated location to participate in a 5-minute dispatch.

Developing a market strategy

Every resource in the wholesale marketplace creates a strategy to monetize their asset with careful consideration of financial and physical constraints. Wholesale resources typically consider the risk profile and constraints of one or several machine components. An ADER must consider the risk tolerance and availability profile of hundreds of individual consumers. Perhaps more importantly, each ADER participant must understand the product it is selling from the aggregated resource, and how it impacts the primary objective for the participating on-premise device and the customer's preferred and primary use case for the device.

Tesla Powerwall has many applications; in most ERCOT installations the primary objectives of the customer are to improve self-consumption of coupled solar generation and reduce dependency on the grid. Accordingly, an ADER participant with solar and a battery will accumulate charge during the day, reach a peak state of charge in the afternoon, and discharge while attempting to match site load in the sunset hours. The Powerwall is also designed to respond to high prices as they occur throughout the day.

Tesla has activated this strategy such that consumers interact with ERCOT in real-time, expressing their capabilities to net inject as a bid-to-buy, and curtailing effective load by dispatching the battery when grid prices exceed their marginal utility of consuming off-site power. Participants will soon be able to also provide grid reserves (Non-spinning Reserve Service) as currently enabled in the Phase I ERCOT Governing Document for ADERs.

The challenge to Tesla, as the aggregator and operator of ADERs, includes:

A. **Explaining the product to a customer**: Every customer must understand how they contribute to an aggregated product with sufficient detail to make an informed decision to participate or opt-out.
B. **Adjusting offers to ensure availability**: Every day-ahead offer must be made with knowledge or exceptional forecast ability to sustain a response when called upon to perform for an ancillary service obligation.
C. **Maintaining the flexibility to allow intra-day opt-outs and price response**: A Powerwall enables better utilization of solar and off-grid resiliency. Tesla, when developing an ADER strategy must enable customers to provide grid services when they choose to do so, and allow them to select other objectives when they choose to do so in real-time.
D. **Communicating what is occurring in real-time**: Utilizing Tesla's mobile app, every Powerwall owner knows precisely what their device is doing in real-time. Traditionally, the app has informed customers when and if they are deployed as part of their daily cycle and price excursions. Now, by virtue of app refinements developed in support of the ADER pilot, a customer knows when their device responds and withholds a response awaiting an operator dispatch, as part of an ADER/VPP.
E. **Creating an intuitive customer experience, with easily understandable cost-causation principles and incentives**: In the wake of catastrophic weather-driven supply interruptions, consumers have a heightened awareness of how extreme events threaten the continuity of electric supply. Tesla has used the ADER Pilot to improve a consumer's awareness of the grid while providing implements that can respond to grid needs without inconveniencing the consumer. Demystifying grid jargon typical in the industry means, as part of the ADER pilot, Tesla must capture the basics of supply and demand, and enable consumers to use their investment in Powerwalls to provide a coordinated response to the grid. Perhaps most importantly, Tesla leveraged the ADER pilot to develop a payment mechanism to reward consumers for the value they create and do so in a way that is aligned with their willingness to participate in real-time. As we progress through subsequent phases of the pilot, Tesla wishes to make the VPP experience one where customers can observe their value creation and receive rewards commensurate with their willingness to 'opt-in' when their capacity is needed the most. This is a starting point and a baseline for how ERCOT should be able to value and rely on dispatchable DERs in the near future as they continue to be adopted in record numbers by Texans.

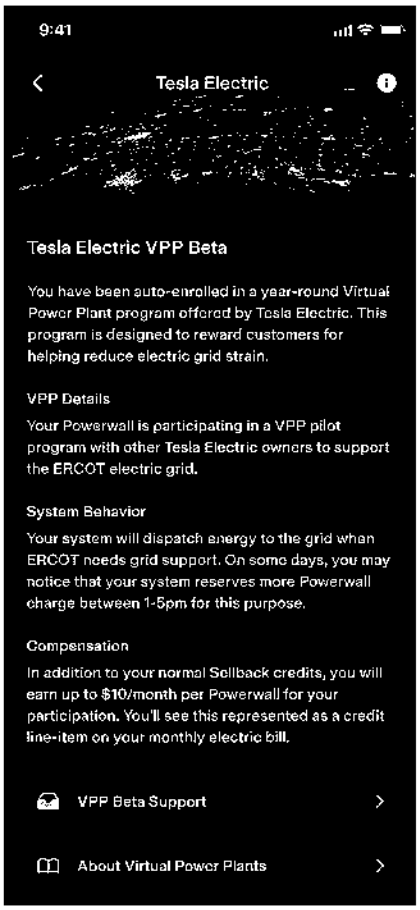
Developing customer incentives

Tesla Electric, as a REP and ADER aggregator, seeks to serve a customers' grid needs while reducing the cost of ownership of residential energy storage devices when providing grid services. Providing grid services is aligned with our aspirations to aide in the need identified by the Commission and the Texas Legislature to add dispatchable megawatts to the ERCOT grid and enhance competition in the ERCOT market by passing value created to the owners of the devices providing that service. Tesla used the ADER pilot to develop new incentives to incentivize participation and build familiarity with how the devices will interact with the grid in an ADER/VPP.

As explained in the graphic, participating Tesla Electric Customers will get a monthly bill credit reflecting of their participation in an ADER. In many months, the bill credit will be greater than the value created by each customer.

Comparatively, current forecasts indicate that the summer and extreme winter value creation will fund the credit for the balance of the year. In subsequent phases of the pilot, Tesla will experiment with how we can retain customer engagement with consistent revenue streams while creating additional incentives to create value when the need for grid services is most pronounced.

****Note: The Tesla Electric experience surfaced internal testing communications to eligible VPP customers for ADER/VPP on July 17, 2023.** This will be followed by ERCOT-integrated testing and telemetry exchange, and live operation in ERCOT after successful completion of the required testing. Tesla Electric customers will be brought along for the journey through the Tesla App experience on all of these ERCOT commissioning steps.



Enabling a standard for 3rd party participation

Over the course of the ADER Pilot, Tesla has repeatedly heard that other retailers, wholesalers, and non-opt-in-entities ("NOIE") (municipal and cooperative load serving entities that do not avail of competitive electric service) wish to build ADER populations within their existing customer portfolios. Expanding our capabilities to provide this service to third parties is critical to our mission. Tesla has used the ADER pilot to develop the enhancements and control systems required to perform this service internally. It is essential to progress to subsequent phases of the pilot so we can progress on conceptual designs to enable non-Tesla Electric customers to provide the grid services through the ADER pilot that are the most suited to energy-limited battery storage resources. This is pivotal to expanding ADER participation to a scale that is sustainable and meaningful to ERCOT.

Dynamic MPC/LPC

The ADER Pilot created an opportunity to test the precision of our aggregate device monitoring. As stated above, Tesla seeks to provide telemetry that meets or exceeds the standards observed by traditional resources. Over the course of the ADER Pilot, we acknowledged that the dynamic nature of a population of devices requires continuous updates. Each device has different solar configurations, irradiance, and state of charge. The ADER pilot has allowed Tesla to identify how we can capture this data and relay it to ERCOT continuously, so that the availability of each of the ADERs is known to ERCOT with accurate depictions of the aggregation's constraints.

Refining dispatch control systems to perform with traditional resource accuracy (or better)

A traditional resource has a control system with ubiquitous control of all machine components. Comparatively, an aggregation shares controls with a consumer device. When operating in harmony, an ADER control system anticipates availability and influences response every five minutes. No such control system existed prior to the ADER pilot. The controls developed by Tesla engineers consider the availability, constraints, and conflicts with individual sites and their respective onboard controls to evoke a response that is equal or better to that expected of a traditional resource.

Updating ERCOT's registration portal (RIOO) and completing new ERCOT and PUC Documentation

ADER participation has required ERCOT, PUC and market participants to develop best practices in several areas of reporting, registration and Resource and QSE documentation that has only existed to date for controllable loads, generation, and distributed generators 1 MW and greater, and settlement only generators. New process flows have been developed between QSEs, TDSPs, and ERCOT to effectuate these newer best practices which ERCOT has published on its ADER webpage.

Further, ERCOT has provided significant and detailed guidance on how to surface parameters for a distributed ADER resource as a load-zone Controllable Load Resource ("CLR"), which is the only existing resource category in its electronic RIOO registration system that is capable today of consuming the required inputs to include ADER net injectable capacity in its network operations model.

ERCOT has stipulated new parameters for entering ADER details as a CLR based on the expected size and location of the ADER population as presented in the new "Details of the Aggregation Form," inclusive of a new concept of adding a nameplate capacity "cushion" in the modeled ADER MW given expectation of growth and change in the individual sites in the ADER population over time. As a result of this exercise, Tesla in conjunction with ERCOT has established market-wide guidance that clearly stipulates the number of days or weeks each step of the ADER registration will require to get to the telemetry validation and "go live" stages of operating an ADER in the market. These requirements are posted to the following webpage: https://www.ercot.com/mktrules/pilots/ader

Future needs: higher caps, min efficient scale, multiple, secure revenue streams

The first phase of the ADER pilot allows Tesla to demonstrably assess the viability of aggregations as a provider of energy and reserves. Tesla will execute the first phase with confidence in the capabilities of the devices and our control systems; however, we have raised many questions concerning the economic viability of ADERs in the future and the need to quickly address these issues to allow more market participants to add ADERs to the project. First, we have learned that the costs associated with maintaining a QSE and servicing telemetry is challenged on a small scale. The ADER pilot created an opportunity for distributed devices to participate in a manner of equal or better standards applied to traditional resources, which is excellent. Telemetry systems and other QSE costs are often dwarfed by the revenue potential of large, centralized resources. Comparatively, we experience that ADERs have a break-even point near the 15-20MW scale. This scale is at or above current QSE caps, which must be increased.

Further clouding future ADER opportunities, particularly for enabling third party ADERs, is the sudden and soon to be implemented Dispatchable Reliability Reserve Service (DRRS). One of the options to implement DRRS is to replace the existing Non-spinning Reserve Service. Non-spin is the only service available to ADERs today within the pilot. DRRS is a slower, inferior response relative

to our ADER capabilities and revenue expectations are unknown, but likely to follow the performance requirements in a downward direction (relative to the existing non-spin product.)

ADERs are capable of providing ECRS and RRS, and subsequent Pilot Phases must include opportunities to demonstrate this capability to ensure the long-term revenue streams exist for ADERs during the pilot, including for third party participants Tesla endeavors to support, and, material access to revenue streams available in future market design when the pilot sunsets.

Differences between Passive Price Response and Active Participation as ADER

In ERCOT markets today, prior to the ADER pilot, there was no mechanism to operate a VPP construct that allowed participants to coordinate their response with ERCOT. VPP activities, without the ADER pilot's allowances, only allow for coordinated passive demand response.

Passive demand response is fundamentally different from what the ADER Pilot has enabled. Passive demand response allows energy injections to respond to price excursions and be compensated at the real-time load zone price, just as any other net-injector on the ERCOT grid (enabled for example, by retail solar buyback plans). However, these megawatts do not appear as a resource to ERCOT, but as a negative load. Passive demand response allows for customers to be compensated for a valuable response that is correlated with times of grid need, but these negative loads are not coordinated with other wholesale resources which ERCOT expects to be available, so do not lend themselves to supporting efficient clearing outcomes. Active participation in the ERCOT market means that the ADER Pilot Project is used in a way that is part of a least-cost solution that is aware of grid constraints. Thus, the project is a catalyst of the significant work that will be necessary to ensure a future state in ERCOT where coordinated dispatch of wholesale and distributed resources will lead to economically efficient market outcomes.

The fact that ERCOT is progressing with the ADER pilot at a relatively early stage of DER integration, will support future market design changes allowing DERS to enhance wholesale price formation, support better valuation of reliability services and reserves which include modeled scenarios incorporating ERCOT-coordinated DER response, and contribute favorably to transmission and distribution system constraints.

ADER operations are also transparent and visible to other market participants. This transparency allows all market participants to consider, with confidence, investing, and operating in the ERCOT marketplace, and improves the overall efficiency of the ERCOT market.

For all the benefits of active market participation, subsequent phases of the ADER pilot should identify ways to make ERCOT-coordinated demand response programs preferential to the status quo. The ADER pilot is an opportunity to optimize these new assets, as distributed storage, electric vehicles, and on-site generation continue to proliferate across the ERCOT system.

Tesla appreciates the opportunity to provide this update to the Commission and ADER Task Force Members.

[End of ADER Pilot Project Year 1 Milestones Report]

Department of Energy VPP Listening Session Roundtable, Austin, Texas

(L – R Pictured at Table) Commissioner Will McAdams, Texas PUC; Arushi Sharma Frank, ADER Task Force Vice Chair; Doug Lewin, Stoic Energy; Michael Lee, Octopus Energy CEO – ADER Task Force; Energy Secretary Granholm; Jigar Shah, DOE LPO; Prof. Sergio Cutellanos, UT; Bart Bohn, Pecan Street CEO; David Monsma, Mitchell Foundation; Commissioner Jimmy Glotfelty, Texas PUC; Kenan Ogelman, ERCOT VP Commercial Operations.

On March 10, 2023, Department of Energy Secretary Jennifer Granholm visited with the sponsors of the Aggregated DER Pilot Project and the leadership of the ADER Task Force, along with a variety of stakeholders and local Texas leaders involved in supporting the study and adoption of distributed energy reliability solutions as virtual power plants. This was the first of several VPP listening sessions that the Secretary intends to facilitate to deepen the exchange of information about how the Department of Energy can spur VPP deployment. The Department's VPP Spotlight[4] describes the ADER Task Force's work to enable the ERCOT Pilot as a trailblazing aggregated energy project and notes that the Texas project was selected for the first such VPP Listening Roundtable.

The roundtable participants discussed how to accelerate the deployment of Virtual Power Plants as a tool to reach national energy affordability, energy resiliency, decarbonization, and energy justice goals. The panel was moderated by Jigar Shah, Director of the Department of Energy's Loan Programs Office.

(L – R) Secretary of Energy Jennifer Granholm, ERCOT CEO Pablo Vegas

Participants provided detailed feedback on how the ADER Task Force launched the ADER pilot program on an accelerated timeline, how the pilot aims to increase energy affordability and grid resilience, and shared best practices that can be applied elsewhere in the U.S., including the collaborative governance approach between the sponsoring Commissioners and their staff, ERCOT staff and leadership, and a committee of private sector and institutional stakeholders that have taken on the work of organizing, mobilizing, and self-committing to accountability and progress on a difficult but critical pathway to essential reforms in electric markets policy.

The Department of Energy' engagement of ERCOT and Commission leadership, local leadership, research institutions, and energy reform advocates was a compelling testament to the work and influence that Texas is having on the national stage to innovate solutions and drive investment where it is needed to drive reliability.

(L – R) Jigar Shah, DOE LPO; Secretary of Energy Jennifer Granholm; Commissioner Jimmy Glotfelty, Texas PUC; V.A. Stephens (Chief of Staff, Comm. Glotfelty)

(L – R) Jason Ryan, CenterPoint Energy – ADER Task Force Chair; Commissioner Will McAdams, Texas PUC

[4] https://www.energy.gov/lpo/articles/sector-spotlight-virtual-power-plants